

SANTANA STOWAWAY TANDEM WITH AIRLINER SAFECASE™ AND FTS™ FOAM TRAY SYSTEM ASSEMBLY AND DISASSEMBLY

Congratulations! You are now the proud owner of the world's most travel-ready, performance tandem. The following is a description of assembling and disassembling your Santana Stowaway tandem with S&S Machine couplers and Santana oval couplers, including unpacking and packing it into the Santana Airliner SafeCase™.

NECESSARY TOOLS

8mm long allen wrench
3, 4, 5, 6mm allen wrenches
Bottom bracket pin spanner
S&S coupler wrench

ASSEMBLY

FRAME

1. Place the Airliner SafeCase™ flat on the ground with the handles facing you. The lid is the side with the latches. Protect the surface of the case from scratches by placing it on a non-abrasive surface.
2. Insert the rear seat/seatpost assembly into the rear triangle, leaving enough room to clamp the rear seatpost into a bike stand. **Never clamp your tandem into a bike stand by the frame tubes, or serious damage will occur.** If a bike stand is not available, the FTS™ Foam Tray System layers, with the parts removed, can be used as protection from the ground.
3. Apply the Teflon® grease to the outer coupler threads about every third use, once a year, or as needed.
4. Loosely install the oval bottom tube (with the hydraulic cable guides on the brake side) to the rear triangle or loosely install, with the teeth engaged, the double round bottom tubes (with the hydraulic cable guides on the one tube on the brake side facing down) to the rear triangle.
5. Loosely install the lateral tube with the teeth engaged, with the water bottle holes on top and toward the back, to the rear triangle.
6. Loosely install the top tube with the teeth engaged, with the cable guide on the left side and in line with the others, to the rear triangle.
7. Loosely install the front triangle with the teeth engaged. (Be sure to have placed the hydraulic cable and caliper between the double bottom tubes.)
8. Depending on the size and configuration of your tandem, you may need to install the fork. Make sure the bearing cages face each other.
9. If your tandem has a locking collar that holds the fork to the frame, fasten the handlebar stem to the fork steer tube and tighten the handlebar. Install the top cap. **Do not overtighten the top cap.** It adjusts headset tolerance. It does not fasten the fork to the frame.

If your tandem does not have a locking collar, remove the handlebar stem packing spacer from the fork steer tube and replace it with the handlebar stem. Do not tighten. Keep any headset spacers below the handlebar stem. Be sure the rubber seal on the top bearing cup is not protruding as the headset adjustment top cap is tightened. **Do not overtighten the top cap.** It adjusts headset tolerance. It does not fasten the fork to the frame. Tighten the handlebar stem to the steer tube and to the handlebar.

10. Install the front wheel with the quick-release lever on the timing (left) side.

11. If equipped with a computer, connect any wire, pickup, or head. Secure wire with zip ties or tape, so it doesn't rub the tire or catch on the brake.
12. Tighten the round couplers with the S&S coupler wrench, and Santana oval couplers with an allen wrench.
13. Install the front seat/seatpost assembly.
14. Install the rear handlebar assembly, tightening the two bolts in the middle of the adjustable stem, and tightening the handlebar bolts.

DRIVETRAIN

15. Unwrap the chain from its protective wrapping on the chainstay.
16. Install the rear wheel with the cassette on the drive (right) side and the quick-release lever on the timing side while draping the chain over the smallest cog. (For Arai drum brakes, the bolt on the brake anchor arm on the wheel must be positioned in the brake anchor slot on the frame. Never attach the bolt to the frame.)
17. On the drive side, install the triple chainwheel crank arm to the rear bottom bracket spindle while pulling the chain onto the smallest chainwheel. Install the crank arm without chainwheels to the front bottom bracket spindle. **The splines on the crank arms and the bottom bracket spindles must line up exactly. Serious damage can occur if they aren't aligned.**

All crank bolts tighten clock-wise and must be tightened as firmly as possible. (Tightening torque is 305 – 435 in.lbs. / 35 – 40 Nm.)

18. The crank arms might be longer on the front of the tandem. The lengths of most crank arms are stamped on them, i. e. 170 or 175. On the timing side, install the (long) single chainwheel crank arm to the front bottom bracket spindle, 180° from the one opposite it. Install the (short) single chainwheel crank arm to the rear bottom bracket spindle, 180° from the one opposite it.
19. Install the pedals by attaching the right-hand (clock-wise) thread pedals on the right side, and the left-hand (counter clock-wise) thread pedals on the left side.
20. Install the timing chain with the front and rear cranks in phase.
21. Tighten the timing chain by rotating the eccentric downward, until the chain is tight, but not so tight that it vibrates as the cranks are turned.
22. Firmly tighten the two allen bolts under the eccentric bottom bracket shell, being sure the eccentric is centered, left and right, in the bottom bracket.

BRAKES AND DERAILLEURS ETC

23. (Install the hydraulic caliper to the frame mount adapter. Install the master cylinder to the timing side cable guide of the down tube. Clip the hydraulic line into the cable guides on the bottom of the down tube, bottom tube, and top of the chain stay. Be sure there are no sharp bends or kinks in the line.)
24. If equipped with a cable operated hub brake, use the slotted cable guide in the center of the down tube, center of the eccentric, front, bottom bracket shell, and cross to the timing side of the rear bottom bracket shell, positioning the Teflon® tubing at the bottom bracket shells. Pull the Santana/Arai drum brake quick-release cable end over the pivoting brake arm.
25. Install the front, linear pull, rim brake arm to its fork mount or the side pull, caliper brake unit to its fork center hole with an allen wrench.
26. Thread the rear rim brake cable through the slotted cable guide on the side of the front top tube, and screw the barrel adjuster into the guide. Thread the cable through the next slotted guide, and join to the cable Quick Connect attached to the rear brake.

27. Position the front derailleur shifter, so the derailleur is in the innermost position. Thread the cable through the slotted cable guide on the drive side of the down tube, and screw the barrel adjuster into the guide. Continue through the drive side guide, with the Teflon® tubing, on the eccentric, front, bottom bracket shell. Cross the cable, and join, with the Quick Connect, to the front derailleur cable through the center guide, with the Teflon® tubing, on the rear bottom bracket shell.
28. Position the rear derailleur shifter, so the derailleur is in the outermost position. Thread the rear derailleur cable through the slotted cable guide on the timing side of the down tube (If equipped with a hydraulic disc brake, thread the rear derailleur cable through the middle guide.), and screw the barrel adjuster into the guide. Continue through the timing side guide (or center guide if a hydraulic brake), with the Teflon® tubing, on the eccentric, front, bottom bracket shell . Cross the cable, and join, with the Quick Connect, to the rear derailleur cable through the drive side guide, with the Teflon® tubing, on the rear bottom bracket shell.
29. Fine adjust the brakes and derailleurs with the adjusters on the front of the frame.
30. Assemble the remaining parts, making sure the seat post clamps and both handlebars are firmly tight. **Do not over tighten.** Re-check all other connections to insure that they're tight.
31. Inflate the tires to the pressure on the sidewalls.

DISASSEMBLY AND PACKING

BRAKES AND DERAILLEURS ETC

1. Before disassembling your tandem, it's a good idea to record the seatpost settings by measuring or marking with tape.
2. Place the Airliner SafeCase™ flat on the ground with the handles facing you. The lid is the side with the latches. Protect the surface of the case from scratches by placing it on a non-abrasive surface. Place FTS™ Foam Tray System layer #1 in the case with the number at the hinge.
3. Clamp the tandem by the rear seatpost to a bike stand. **Never clamp your tandem into a bike stand by the frame tubes, or serious damage will occur.** If a bike stand is not available, the empty foam layers with higher numbers can be used as protection from the ground.
4. Remove racks, bottle cages, and other accessories. If equipped with a computer, undo any wire, pickup, or head, and coil to the handlebar or fork.
5. Position the front derailleur shifter, so the derailleur is in the innermost position, and position the rear derailleur shifter, so the derailleur is in the outermost position. Unjoin all cables by the Quick Connect, unscrew barrel adjusters, and coil the cables.
6. Remove the front rim brake arm from the timing side or from the fork center hole. **Do not loosen the cable anchor bolt.** Replace the washer and pivot bolt to the fork boss. Wrap the drive side brake arm on the fork or the removed brake unit with the Velcro® padding. Coil the cable to the handlebar.
7. Unjoin the rear rim brake cable by the Quick Connect, unscrew barrel adjuster, and coil the cables.
8. Unclip the Santana/Arai drum brake quick-release cable end over the pivoting brake arm, unscrew barrel adjuster, and coil the cable to the handlebar.
9. (Remove the hydraulic caliper from the frame mount adapter and replace the bolts to the caliper. **Do not remove the frame mount adapter from the frame.** Remove the master cylinder from the cable guide on the down tube, and replace the bolt to the frame. Unclip the line from the cable guides, coil the line to the handlebar, and tape a plastic bag around the master cylinder and the caliper. If equipped with double bottom tubes, coil the line after the line is free.)

DRIVETRAIN

10. Remove the pedals by turning the ones on the drive side to the left (counter clock-wise), and the ones on the timing side to the right (clock-wise). Place them in the plastic box, and put in the case last.
11. Loosen the two allen bolts under the front, eccentric, bottom bracket, rotate the eccentric to slacken the chain, and retighten one bolt enough to keep the eccentric from falling out of the frame. Remove the timing chain and put in the plastic bag.
12. Remove all the cranks and place in foam layer #1 in the bottom of the case. All crank bolts loosen counter clock-wise.
13. Remove the rear wheel, remove the quick-release from the wheel (being careful not to lose the springs), and place the quick-release in layer #2 on the ground. Fully deflate the tire.
14. Wrap the drive side chainstay with the Velcro® padding, leaving a flap sticking upward. Hook the chain around the bottom bracket spindle and hold the chain above the chainstay. Wrap the Velcro® padding flap and straps around the chain.
15. Wrap the drive side seatstay with the Velcro® padding. Wrap the timing side chainstay in the rim/tire area with the Velcro® padding.

FRAME

16. Remove the rear handlebar by loosening the two bolts in the middle of the adjustable stem (not at the handlebar and not at the seatpost). Loosen the handlebar bolt enough to rotate the stem and handlebar to one plane, and place in foam layer #1.
17. Remove the front stem/handlebar assembly by removing the headset adjustment top cap bolt and loosening the bolts on the side of the handlebar stem. If using a bike stand, be sure the bottom of the wheel is supported, so the fork won't fall out. **If your tandem is equipped with a locking collar that holds the fork into the frame, do not loosen it.**
18. If your tandem does not have a locking collar, replace the handlebar stem packing spacer and the headset adjustment top cap. **Do not overtighten.** (If your bike requires the fork to be removed, stack the headset on the fork steer tube in the same configuration it was removed.)
19. Remove the front wheel, remove the quick-release from the wheel (being careful not to lose the springs), and place the quick-release in layer #2 on the ground. Fully deflate the tire.
20. Remove the front seat/seatpost assembly.
21. Loosen (do not disconnect) all the round couplers until finger tight with the S&S coupler wrench.
22. Front triangle: If equipped with a drum brake, wrap the lateral and down tubes with the Velcro® padding. Place the plastic cap on the drive side of the bottom bracket spindle. Remove the front triangle, and place in foam layer #2 on the ground.
23. Remove the top tube and place in foam layer #1.
24. Remove the lateral tube and place in foam layer #1.
25. Remove the bottom tube(s) and place in foam layer #1.
26. Put the plastic cap on the lateral coupler end of the rear triangle.
27. Remove the rear seat/seatpost assembly.

PACKING

28. Place the tools in the plastic bag and place in foam layer #1.
29. Place foam layer #2 with its contents in the case.
30. Place foam layer #3 in the case, and place the rear wheel in it with the cassette up.
31. Place foam layer #4 in the case. Rotate the front handlebar stem on the bar, and place the assembly in the case with the handlebar stem on the bottom and the handlebar facing the side of the case. (If equipped with a side pull brake, wrap it with the Velcro® padding.)
32. Place foam layer #5 in the case, and place the seat/seatpost assemblies in it.
33. Place the rear triangle on top of foam layer #5. Place the front wheel inside the rear triangle.
34. Place foam layer #6 in the case, and place the frame pump in it.
35. Make adjustments to allow the lid to close completely. Engage the side latches first, and be sure the top and bottom metal tracks fit together. Engage the front latches, and lock if necessary.



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Layer #1: Stoker bar & stem, cranks, rear top tube, rear lateral tube, bottom tube(s)



Layer #2: Front triangle, fork, QR skewers



Layer #3: Rear wheel with cog set facing upward



Layer #4: Captain bar & stem with levers



Layer #5: Step 1
Captain + stoker saddles and seatposts



Layer #5: Step 2
Place rear triangle with front wheel tucked in above saddles and seatposts.